IBIS Hybrid Summit at IEEE EMC+SIPI 2026 Minutes

Meeting Date: **August 6, 2026**
Meeting Location: **Dallas, TX USA with IEEE EMC+SIPI 2026**

VOTING MEMBERS AND 2026 PARTICIPANTS

AMD	(Bassam Mansour)
Analog Devices	(Jermaine Lim-Abroguena)
Applied Simulation Technology	(Fred Balistreri)
Arm	Kinger Cai*
Aurora System	(Dian Yang)
Broadcom	(Yunong Gan)
Cadence Design Systems	Kyle Lake*, Jared James, Sai Zhou
Ciena	(Stephen Shew)
Cisco	(Shadi Ebrahimi Asl)
Dassault Systemes	(Stefan Paret)
Google	(Hanfeng Wang)
Huawei Technologies	(Hang (Paul) Yan)
Infineon Technologies AG	(Kasthuri Rengan Narayanan)
Intel Corporation	Michael Mirmak*, Ben Silva, Alex Manukovsky, Joshua Nutzati
Keysight Technologies	Fangyi Rao, Ming Yan, Pegah Alavi, David Banas, Seok Keun Choi, Tim Wang Lee
Marvell	Steven Parker, Ioana Preda, Roxana Vladuta, Toma Ursutiu
MathWorks	Walter Katz, Tripp Worrell
Micron Technology	Justin Butterfield
MST EMC Laboratory	Chulsoon Hwang, Zhiping Yang*, Sathvika Bandi*, Simon Hwang*
Nvidia	(Ben Friedmann Gluck), Elad Bar*
Siemens EDA	Weston Beal, Arpad Muranyi*, Randy Wolff*, Todd Westerhoff, Zhichao Deng, Matt Leslie, Scott Wedge
Signal Edge Solutions	(Benjamin Dannan), Tyler Huddleston, Emily Tann, [Graham Kus]
STMicroelectronics	Manish Bansal, Manishka Mishra, Fabio Brina, Raushan Kumar
Synopsys	Curtis Clark, Ted Mido, Edna Moreno, Jian Yang, Manu Pillai*
ZTE Corporation	(Zhongmin Wei)
Zuken	Ralf Brüning, Shinji Takahashi

OTHER PARTICIPANTS IN 2026

Advantest Corporation	Genichi Tanaka
Altera	Hsinho Wu
Amphenol	Graham Kus*, Gerson Morales*
Analog Devices	Fracis Ian Calubag*, Vincent Paul Sabillo*
Apple	Yi Cao*
ASUS	Chite Chen, Joseph Chen
Dacco	Joan Vollen
Eliyan	Ali Khoshniat, Joshua Kim, Arpit Kothari, Mohammad Mahani
Extreme Engineering Solutions	Kyle Jenkins*
FJScaler	Ron Olisar
Harman	Isabelo Dector
KAIST EMC Lab	Sanguk Lee*, Hyunwoo Kim*
KarMic	Padiyappa S.
Kioxia	Yuta Hibe

Kyung Hee University	Junyong Park*
McGill University	Roni Khazaka
Mercury Systems	Casey Mallare
New Polys LLC	Zahra Pezeshki
Palo Alto Networks	Shaowu Huang*
PCB Automation	Zhiping Yang*
Qualcomm	Todd Bermensolo
RaceEL Systems	Venkata Rao S
Rose-Hulman Institute of Technology	Michael Cracraft*
SAE-ITC	Tammy Patton, Richard DeMary, Jose Godoy
SI-Clarity	Doug Burns
Sintecs	Hans Klos
Socionext	Futoshi Terasawa
Unaffiliated	Ole Steffensen, Wilfredo H*

In the list above, attendees present at the meeting are indicated by "*." Those submitting an email ballot for their member organization for a scheduled vote are indicated by "^." Principal members or other active members who have not attended are in parentheses "( )." Participants who no longer are in the organization are in square brackets "[ ]."

UPCOMING MEETINGS

The connection information for future IBIS teleconferences is as follows:

Microsoft Teams meeting
Join on your computer or mobile app
Click here to join the meeting

Join with a video conferencing device
106010980@teams.bjn.vc
Video Conference ID: 114 666 897 5
Alternate VTC dialing instructions

Or call in (audio only)
+1 267-768-8015,554664847# United States, Philadelphia
Phone Conference ID: 554 664 847#
Find a local number | Reset PIN
Learn More | Meeting options

All teleconference meetings are 8:00 a.m. to 9:55 a.m. US Pacific Time. Meeting agendas are typically distributed seven days before each Open Forum. Minutes are typically distributed within seven days of the corresponding meeting.

NOTE: "AR" = Action Required.

SUMMIT MINUTES - SUMMARY AND LINKS

The IBIS Summit at IEEE EMC+SIPI 2026 at Dallas, TX was held both in-person and online in hybrid format. The notes below capture key content and discussions. A summit recording is available.

IBIS Summit presentations, their recordings and support materials are available at this link:

Link: https://www.ibis.org/summits/aug26/

OFFICIAL OPENING AND AGENDA

(Start 00:00:00, To 00:01:12)

The summit was hosted in-person by Kinger Cai. The IBIS Chair, Kyle Lake, joined remotely. Kinger welcomed attendees to the summit. Kyle thanked the IBIS summit sponsors for their support: Cadence, Intel, Keysight, MathWorks, Micron, Siemens EDA, and Synopsys.

IBIS CHAIR'S REPORT

(Start 00:01:12, To 00:24:00)

Kyle Lake, Chair, IBIS Open Forum Committee (Cadence Design Systems, USA)

Kyle presented on the following:

- 7 IBIS Sponsors as of February 2026:
  - Cadence Design Systems
  - Intel
  - Keysight Technologies
  - MathWorks
  - Micron
  - Siemens EDA
  - Synopsys
- 27 IBIS Member Organizations
  - A consortium involving multiple companies- both EDA vendors, Hardware implementation companies, and ASIC/CPU chip vendors.
  - The number of members by year has more or less moved between 25 and 35 members since 1995, these numbers have changed as acquisitions have come along.
  - IBIS Open Forum website where corporate logos represent membership.
- Roster of IBIS Officers for current term, June 12, 2026 to May 2027
  - Summary of elected individuals representing organizations on board:
    - Chair: Kyle Lake, Cadence Design Systems
    - Vice Chair: Kinger Cai, arm
    - Secretary: Graham Kus, Amphenol
    - Treasurer: Randy Wolff, Siemens EDA
    - Librarian: Zhiping Yang, PCB Automation & MST
    - Postmaster: Curis Clark, ANSYS/Synopsys

        - Social Media: Edna Moreno, Synopsys
        - Summits: Manu Pillai, Synopsys
        - Webmaster: Steve Parker, Marvell
        - Additional liaison positions:
            - University Relations: Chulsoon Hwang, MST
            - IEEE DASC Liaison: Michael Mirmak, Intel
- IBIS Meetings (weekly teleconferences)
    - Quality task group (Tuesdays, 9:00 PT)
    - Advanced Technology Modeling (ATM) task group (Tuesdays, 12:00 PT)
    - Interconnect task group (Wednesdays, 8:00 PT)
    - Editorial task group (Fridays, 8:00 PT when no IBIS OF meeting)
- IBIS Open Forum teleconference every 3 weeks (Fridays, 08:00 PT)
- IBIS Summit meetings (USA and international)
    - DesignCon, IEEE SPI, IEEE EMC+SIPI, Shanghai, Tokyo (JEITA-organized)
- Participants: ~330 in 2025
    - Participants noted as accumulated attendance-list in Minutes throughout each year
- SAE ITC
    - Industry Technologies Consortia is the parent organization of the IBIS Open Forum
    - SAE ITC representatives: Tammy Patton, Rich DeMary, and Peter Doty
    - SAE ITC provides financial, legal, and other services to the IBIS Open Forum:
    - Link: https://www.sae-itc.com/
- Task Groups
    - Advanced Technology Modeling (ATM) task group (Tuesdays, 12:00 PT)
        - Chair: Arpad Muranyi, Siemens EDA
        - https://ibis.org/atm_wip/
        - Develop non-interconnect technical BIRDs
    - Editorial task group (Fridays, 8:00 PT when no IBIS OF meeting)
        - Chair: Michael Mirmak, Intel
        - https://ibis.org/editorial_wip/
        - Produce IBIS specification documents
    - Interconnect task group (Wednesdays, 08:00 PT)
        - Chair: Michael Mirmak, Intel
        - https://ibis.org/interconn_wip/
        - Develop on-die/package/module/connector interconnect modeling BIRDs
    - Quality task group (Tuesdays, 09:00 PT)
        - Acting Chair: Randy Wolff, Siemens EDA
        - https://ibis.org/quality_wip/

        - Oversee IBISCHK parser testing and development
- IBIS Milestones
    - Various accomplishments and industry-associated activities shown in slides
- Other Work
    - Specification Development
        - Current official BIRD content in IBIS 8.0 specification
    - IBIS work includes governing Touchstone (s-parameter file) specifications
        - Touchstone 3.0 is in draft stage: pole-residue compression format
    - IBISCHK: IBIS file syntax parser
        - Parser development contract in progress for IBISCHK8
    - TSCHK: Touchstone file syntax parser
        - TSCHK3 is under planning process for 2026
    - Both IBISCHK and TSCHK have freely available executables
    - Both have source code available by license if embedding in EDA tool
- BIRD description (Buffer Issue Resolution Document)
    - Summary of present BIRDs considered for adoption
- TSIRD description (Touchstone Issue Resolution Document)
    - Summary of present TSIRDs considered for adoption
- BUGs
    - How to submit bug reports for IBISCHK and TSCHK/TSCHK2
    - Summary of present BUGs considered for resolution
- Recent and Future Developments in IBIS
    - Expanded system-level perspective
    - Power Integrity focused modeling
    - Multi-level analog buffer modeling
    - Interconnect modeling
    - Quality and Testing
    - Specification Clarification
    - What else should we be looking at? Bring your ideas!
- Participation in IBIS
    - The success of IBIS depends on active participation and volunteering
    - Bringing your ideas and talents to IBIS
        - Task groups for technical discussions and document editing
        - IBIS email reflectors
        - Open Forum teleconferences for event planning and voting
        - Summit presentations
        - Social Media Ideas

        - IBIS Board and task group volunteering
        - Writing BIRDs- Buffer Issue Resolution Documents
- IBIS Website Resources
    - IBIS Summits
    - Task Group information
    - Member FAQ
    - Specification documents (IBIS and Touchstone)
    - BIRDs (IBIS), ISSIRDs (Spice), and TSIRDs (Touchstone)
    - Email support
    - Syntax parser downloads (IBISCHK for IBIS/IBIS-AMI and TSCHK for Touchstone)
    - Link: https://www.ibis.org

This concluded the Chair's report.

PRESENTATIONS:

IBIS-AMI MODELING OF RE-DRIVER CIRCUITS VIA DECONVOLUTION-BASED IMPULSE RESPONSE EXTRACTION

(Start 00:25:30, To 00:49:05)

Sanguk Lee (Korea Advanced Institute of Science and Technology)
Seonghi Lee (Korea Advanced Institute of Science and Technology)
Zhiping Yang (PCB Automation & MST EMC Lab)
Hyunwoo Kim (Korea Advanced Institute of Science and Technology)
Seungyoung Ahn (Korea Advanced Institute of Science and Technology)
Chulsoon Hwang (MST EMC Lab)

[Presented by Sanguk Lee]

The presentation covered the following:

- Introduction
- Proposal IBIS-AMI Modeling of Re-driver Circuits via Deconvolution-based Impulse Response Extraction
- Verification of Proposed Method
- Discussion

NEURAL NETWORK MEETS IBIS-AMI: DATA-DRIVEN APPROACH TO NONLINEAR BUFFER MODELING

(Start 00:49:30, To 01:18:20)

Sathvika Bandi (MST EMC Lab)

Seonghi Lee (MST EMC Lab)

Sanguk Lee (MST EMC Lab)

Zhiping Yang (PCB Automation & MST EMC Lab)

Seungyoung Ahn (MST EMC Lab)

Chulsoon Hwang (MST EMC Lab)

[Presented by Sathvika Bandi]

The presentation covered the following:

- Introduction
- IBIS-AMI simulation implementation method4
- Verification
- Conclusion
- Discussion

S2IBISPY – A PYTHON REWRITE SPICE-TO-IBIS CONVERTER

(Start 01:19:10, To 01:48:05)

Simon Hwang (MST EMC Lab)

Chulsoon Hwang (MST EMC Lab)

Zhiping Yang (PCB Automation & MST EMC Lab)

[Presented by Simon Hwang]

The presentation covered the following:

- Introduction
    - Motivation
    - Limitations
- S2IBISPY
    - NCSU S2IBIS
    - S2IBISPY
- Future Works
- Discussion

IBIS 8.0: SPECIFICATION AND PARSER INTRODUCTION

(Start 01:49:50, To 02:06:00)

Randy Wolff (Siemens EDA)

(Chair, IBIS Quality Task Group)

[Presented by Randy Wolff]
The presentation covered the following:

- Introduction
- IBIS 8.0 Timeline
    - IBIS 7.2 Specification approved January 27, 2023
    - IBIS 8.0 motion approving content June 21, 2024
    - Original IBISCHK8 parser contract December 2024
    - Second IBIS 8.0 motion on BIRD content approved August 2025
    - IBIS 8.0 Specification Draft 1.0 introduced to IBIS OF September 2025
    - IBIS 8.0 Specification approved December 5, 2025
- IBIS 8.0 Content
    - BIRD224 New AMI Reserved Parameters for Ts4file port order
    - BIRD224 Clarification for bus_label rules
    - BIRD227 AMI Ignore Block Feature
    - BIRD228 Pin Name Field Extension
    - BIRD229.1 AMI Test Data Support
    - BIRD230.1 Adding a Definitions Section to IBIS
    - BIRD231 Clarifications on AMI Block Concepts
- IBISCHK8 Parser Coverage
    - BUG ID#s filed against IBISCHK7.2.1
- IBIS 8.0 and IBISCHK8 Parser Next Steps
    - IBIS 8.0 Specification available at IBIS website:
    - Link: https://ibis.org/ver8.0/
- Discussion

STANDARDIZING POWER INTEGRITY MODELING IN IBIS

(Start 02:06:30, To 02:34:30)
Arpad Muranyi (Siemens EDA)
(Chair, IBIS ATM Task Group)
[Presented by Arpad Muranyi]
The presentation covered the following:

- Background and IBIS-ATM work plan
- High-level overview of BIRD234 and BIRD235
- The July 7, 2026 IBIS-ATM decision and new hierarchy
- Next steps
- Discussion

TOUCHSTONE 3.0 FEATURES & PROGRESS

(Start 02:35:30, To 03:03:00)

Michael Mirmak (Intel, USA)

(Chair, Interconnect Task Group)

[Presented by Michael Mirmak]

The presentation covered the following:

- Touchstone format maintained by the IBIS Open Forum since 2007
    - Touchstone 1.1 (2002) – documented format from mid-1980s RF software
    - Touchstone 2.0 (2009) – added optional IBIS-like keywords for cross-checking
    - Touchstone 2.1 (2024) –corrections plus clarifications on per-port referencing
- Touchstone gaps identified by industry in the interconnect context
    - File compression not supported: large, fast networks cause unwieldy files
    - Connecting ports requires documentation: automation not supported
- Touchstone 3.0 is being prepared to address these issues
- Discussion

CLOSING REMARKS

(Start 03:03:30, To 03:10:13)

Closing remarks provided by summit moderators. Kyle Lake thanked the attendees at the summit and thanked the IBIS summit sponsors for their support: Cadence, Intel, Keysight, MathWorks, Micron, Siemens EDA, and Synopsys.

The meeting was adjourned.

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NOTES

IBIS Officers:

CHAIR: Kyle Lake
klake@cadence.com
Principal Application Engineer, Cadence.

VICE CHAIR: Kinger Cai
kinger.cai@arm.com
Senior Principal Engineer, Arm.

SECRETARY: Graham Kus
graham.kus@ibis.org
Signal Integrity Engineer, Amphenol.

TREASURER: Randy Wolff
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Product Architect, Siemens EDA.

LIBRARIAN: Zhiping Yang
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CEO, PCB Automation.

WEBMASTER: Steven Parker
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Senior Staff Manager, Architecture DSP at Marvell.

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Synopsys.

SOCIAL MEDIA CHAIR: Edna Moreno
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Signal Integrity Engineer, Synopsys.

SUMMITS CHAIR: Manu Pillai
manu.velayudhan@synopsys.com
Sr. Director, Solutions Engineering, Synopsys.

UNIVERSITY RELATIONS CHAIR: Chulsoon Hwang
hwangc@mst.edu
Associate Professor, Missouri University of Science and Technology.

IEEE DASC LIASON: Michael Mirmak
michael.mirmak@intel.com
Signal Integrity Technical Lead, Intel.

This meeting was conducted in accordance with SAE-ITC guidelines.

All inquiries may be sent to info@ibis.org. Examples of inquiries are:

- To obtain general information about IBIS.
- To ask specific questions for individual response.
- To subscribe to or unsubscribe from the official ibis@freelists.org and/or ibis-users@freelists.org email lists (formerly ibis@eda.org and ibis-users@eda.org):
  - https://www.freelists.org/list/ibis
  - https://www.freelists.org/list/ibis-users
- To subscribe to or unsubscribe from one of the Task Group email lists: ibis-macro@freelists.org, ibis-interconn@freelists.org, ibis-editorial@freelists.org, or ibis-quality@freelists.org:
  - https://www.freelists.org/list/ibis-macro
  - https://www.freelists.org/list/ibis-interconn
  - https://www.freelists.org/list/ibis-editorial
  - https://www.freelists.org/list/ibis-quality
- To inquire about joining the IBIS Open Forum as a voting Member.
- To purchase a license for the IBIS parser source code.

- To report bugs or request enhancements to the free software tools: ibischk7, tschk2, icmchk1, s2ibis, s2ibis2 and s2iplt.

The BUG Report Form for ibischk resides along with reported BUGs at:

https://ibis.org/bugs/ibischk/
https://ibis.org/ bugs/ibischk/bugform.txt

The BUG Report Form for tschk2 resides along with reported BUGs at:

https://ibis.org/bugs/tschk/
https://ibis.org/bugs/tschk/bugform.txt

The BUG Report Form for icmchk resides along with reported BUGs at:

https://ibis.org/bugs/icmchk/
https://ibis.org/bugs/icmchk/icm_bugform.txt

To report s2ibis, s2ibis2 and s2iplt bugs, use the Bug Report Forms which reside at:

https://ibis.org/bugs/s2ibis/bugs2i.txt
https://ibis.org/bugs/s2ibis2/bugs2i2.txt
https://ibis.org/bugs/s2iplt/bugsplt.txt

Information on IBIS technical contents, IBIS participants and actual IBIS models are available on the IBIS Home page:

https://ibis.org/

Check the IBIS file directory on IBIS.org for more information on previous discussions and results:

https://ibis.org/directory.html

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SAE STANDARDS BALLOT VOTING STATUS (attendee X; absent -)

Organization	Interest Category	Standards Ballot Voting Status	June 17, 2026	July 10, 2026	July 31, 2026	Aug 6, 2026
AMD (Xilinx)	Producer	Inactive	-	-	-	-
Analog Devices	Producer	Inactive	-	-	-	-
Applied Simulation Technology	User	Inactive	-	-	-	-
Arm	Producer	Inactive	-	X	-	X
Aurora System	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	-	X	-	X
Ciena	User	Inactive	-	-	-	-
Cisco	User	Inactive	-	-	-	-
Dassault Systems	User	Inactive	-	-	-	-
Google	User	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	-	X
Keysight Technologies	User	Inactive	-	-	-	-
Marvell	Producer	Inactive	X	-	-	-
MathWorks	User	Active	X	X	X	-
Micron Technology	Producer	Inactive	-	-	-	-
MST EMC Lab	User	Active	-	-	X	X
Nvidia	Producer	Inactive	X	-	-	-
Siemens EDA	User	Active	X	X	X	X
Signal Edge Solutions	User	Inactive	-	-	-	-
STMicroelectronics	User	Inactive	X	-	-	-
Synopsys	User	Active	-	X	X	X
ZTE Corp.	User	Inactive	-	-	-	-
Zuken	User	Inactive	X	-	-	-

N/A = Temporarily not a voting member

Criteria for SAE member in good standing:

- Must attend two consecutive meetings to establish voting membership.
- Membership dues current
- Must not miss two consecutive meetings (voting by email counts as attendance)

Interest categories associated with SAE standards ballot voting are:

- Users - members that utilize electronic equipment to provide services to an end user.
- Producers - members that supply electronic equipment.

General Interest - members are neither producers nor users. This category includes, but is not limited to, government, regulatory agencies (state and federal), researchers, other organizations, and associations, and/or consumers.